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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,935	12/30/2003	Aaron T. Deever	87209RLW	1924

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EXAMINER	
KOZIOL, STEPHEN R	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/748,935	DEEVER, AARON T.	
	Examiner	Art Unit	
	Stephen R. Koziol	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1,3, 9-10, 16-17, and 19-22 rejected under 35 U.S.C. 102(e) as being anticipated by Joshi et al. US Patent 6,668,090 B1, for the same reasons as set forth in the last Office Action. (Grounds restated for convenience.)

Regarding Claim 1, Joshi discloses a method for encoding digital image data, said method comprising the steps of:

1. defining a base image type and a plurality of higher level image types of said digital image data, each said image type having a preassigned one of a plurality of quantization step-size sets (fig. 1 and 2);
2. transforming the digital image data using a subband decomposition to produce a plurality of subbands, each said subband having a plurality of subband coefficients (fig1, also, col. 2 ln. 40-44);
3. quantizing said subband coefficients of each said subband according to said quantization step-size set of said base image type to provide quantized coefficients(fig 2/item206, also, fig 3/item301, also, col.2 ln. 44-47);

4. partitioning each said subband into a plurality of codeblocks; assigning each said codeblocks one of said image types and a corresponding quantization step-size set to provide respective assigned step-size sets(fig 2, also, col. 5 ln. 22-55);
5. forming one or more bitplanes from said quantized coefficients of each said codeblock of each said subband(fig 2, also, col.2 ln. 47-52); and
6. discarding at least part of one of said bitplanes having a discard parameter in a predetermined range, said discard parameter being a function of the assigned step-size set of the respective said codeblock (fig 2, also, col. 6 ln. 18-41).

Regarding Claim 3, Joshi discloses encoding the quantized coefficients of each codeblock (fig 3/items 301 thru 303, also, col. 5 ln. 55-67).

Regarding Claim 9, Joshi discloses encoding said quantized coefficients of each of said codeblocks in a plurality of coding passes, each said coding pass generating a partial-bitplane, said partial-bitplanes of each said codeblock together defining a respective bitplane; and said discarding further comprises discarding at least one partial-bitplane (fig. 2, also, col. 6 ln. 18-42).
Regarding Claim 10, Joshi discloses the encoding of said quantized coefficients of each of said codeblocks in a plurality of coding passes further comprises entropy encoding (fig 3/item303).

Claims 16 and 17 have been analyzed and are rejected for the reasons outlined in response to claim 1 above because the core limitations claims 16 and 17 recite are nearly identical in scope to those found in claim 1, despite those limitations taking different embodiments.

Regarding Claim 19, Joshi discloses an image encoder with a discard unit that tells the encoder which bitplanes to discard, causing the encoder to discard those bitplanes from further encoding (fig. 2/items 206 thru 215, also, col. 6 ln. 18-42).

Regarding Claim 20, Joshi discloses an encoder further comprising a bit-stream organizer for combining partial-bitplanes into a bit-stream (fig. 2/item 215, also, col. 5 ln. 42-48).

Regarding Claim 21, Joshi discloses an encoder further capable of forming said partial-bitplanes from said quantized coefficients of each said codeblock of each said subband and encoding all of said coefficients; and said discard unit communicates said discardable partial-bitplanes to said bit-stream organizer, which excludes said discardable partial-bitplanes from said bit-stream (fig. 2, also, col 5 ln. 12-55).

Regarding Claim 22, Joshi discloses the image encoder is an entropy encoder (fig 3 /item303).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: ***(See MPEP Ch. 2141)***

a. Determining the scope and contents of the prior art;

b. Ascertaining the differences between the prior art and the claims in issue;
c. Resolving the level of ordinary skill in the pertinent art; and
d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

4. Claims 2, 4-8, 11-15, 18, and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Joshi et al. US Patent 6,668,090 B1 for the same reasons as set forth in the last Office Action. (Grounds restated for convenience.)

Regarding claim 2, Joshi fails to disclose the base image type is preassigned the smallest quantization step-size. However, Official Notice is taken that both the concept and advantage of defining a base image and assigning the base image the smallest quantization step size are notoriously well known and expected in the art, and therefore would have been obvious to incorporate in the image encoding method for defining the smallest quantization step-size set.

See In re Litner, 173 USPQ 560 (CCPA 1972) -- "Claims which are broad enough to read on obvious subject matter are unpatentable even though they also read on nonobvious subject matter."

Regarding claim 4-5, Joshi is silent on weather the discarding of bitplanes is prior to or after encoding the image. However, Official Notice is taken that both the concept and advantage of discarding bitplanes within a predetermined discard range either before or after the encoding of an image are notoriously well known and expected in the art, and therefore would have been obvious to incorporate in the image encoding method for reducing superfluous image data.

Regarding claim 6-8, Joshi fails to disclose the image encoding method further comprising

1. associating an image type with each image coordinate contributing to each codeblock
2. discard parameters that are a function of said image types
3. mapping said coordinated into a plurality of influence regions
4. subband coefficients defining resultant pixels,

however, Official Notice is taken that it would have been obvious to one of ordinary skill in the art at the time of the invention of to employ the above steps 1-4 as claimed in claims 6-8 for codeblock compression and subband coefficient formation for the benefit of discarding unnecessary bitplanes.

Regarding claim 11 and 23, Joshi fails to disclose using an arithmetic binary encoder to perform binary arithmetic encoding. However, Official Notice is taken that both the concept and advantage of binary arithmetic encoding are notoriously well known and expected in the art, and therefore would have been obvious to incorporate in the image encoding method for bitstream generation.

Regarding claim 12-13, Joshi fails to disclose the assigned quantizer step-size is based on image type and labled .DELTA..sup.I.sub.j. and that the base type quantizer step-size is also based on image type and labled DELTA..sup.B.sub.j. and that the number of bitplanes to discard is a logarithmic ratio of the two aforementioned quantizer step-sizes given by: LOG.base2.(.DELTA..sup.I.sub.j. / DELTA..sup.B.sub.j.). However Official Notice is taken that

it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Joshi's disclosed quantizer step-sizes and bitplane discard size to take the form of .DELTA..sup.I.sub.j., DELTA..sup.B.sub.j. and LOG.base2.(.DELTA..sup.I.sub.j. / DELTA..sup.B.sub.j.) respectively for the benefit of defining quantizer step-sizes and bitplane discard sizes.

Regarding claim 14-15, Joshi fails to disclose modifying and shrinking subband coefficients prior to quantization. However, Official Notice is taken that both the concept and advantage of including modifying and shrinking subband coefficients prior to quantization during the process of image encoding are notoriously well known and expected in the art, and therefore would have been obvious to incorporate for the benefit of streamlining the quantization process during encoding.

Examiner's Note

5. The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such

disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Response to Arguments

6. Applicant's arguments filed August 03, 2007 have been fully considered but they are not persuasive.

With respect to claim 1, applicant alleges that "the Joshi et al. Patent is not understood to teach or suggest a linking between (a) codeblock and image type, and (b) image type and quantization step-size set, as required by Claim 1. In fact, the Joshi et al. Patent appears not to discuss image type at all in this regard. For example, the Joshi et al. Patent states that "[e]ach codeblock is compressed by the codeblock compression unit (206) using the appropriate quantizer step-size (209) ...." Col. 5, lines 27-29. However, the Joshi et al. Patent has not been found to teach or suggest that its "appropriate quantizer step-size" is selected based on an image type assigned to the respective codeblock, as required by Claim 1." (Remarks, pp. 8)

Examiner respectfully disagrees.

With respect to applicant's allegation that Joshi et al. fails to teach or suggest a linking between (a) codeblock and image type, and (b) image type and quantization step-size set, Joshi et al. teaches and certainly suggests in col. 5 ln. 12-55 (a) a link between codeblock and image type (see fig 2 items 204-211, also, col. 5 ln. 31-42, where criteria such as visual quality levels and

viewing condition parameters link each codeblock with its desired image type) and (b) image type and quantization step-size set (see fig 2 items, also, col. 5, ln. 27-42, where for each codeblock, an "appropriate quantizer step size is chosen (col. 5 ln. 29)" which is based on the image type criteria associated with each codeblock (col. 5, ln. 31-42). Therefore, the original grounds for rejection are maintained.

With respect to claims (2-15, and 18-23), applicant does not raise further issue, and instead relies upon arguments re independent claim (1), which have been refuted above. Therefore the original grounds for rejection for claims (2-15, and 18-23) are maintained.

Furthermore, applicant does not challenge Examiner's use of Official Notice as applied to claims (2, 4-8, 11-15, 18, and 23). Therefore, applicant acquiesces to the fact that all subject matter contained in claims (2, 4-8, 11-15, 18, and 23) is notoriously well known and expected in the art.

For the reasons above, all 102 and 103 rejections as set forth in the last Office Action stand.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Koziol whose telephone number is (571) 270-1884. The examiner can normally be reached on M - alt. F 8:00-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571) 272-7332. Customer Service can be reached at (571) 272-2600. The fax number for the organization where this application or proceeding is assigned is (571) 273-7332.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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